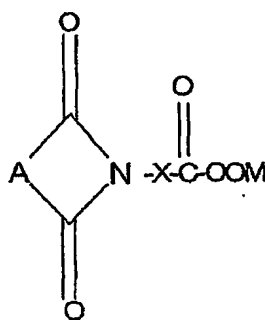


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CLAIMS

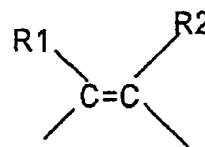
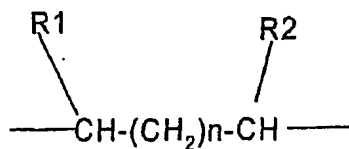
1. Liquid formulations of imidoalkanepercarboxylic acids in the form of aqueous dispersions comprising, in percentages by weight relative to the total weight of the composition:

- 5 A) from $\geq 7\%$ to 40% and preferably from 10% to 20% of imidoalkanepercarboxylic acids having the general formula (I)

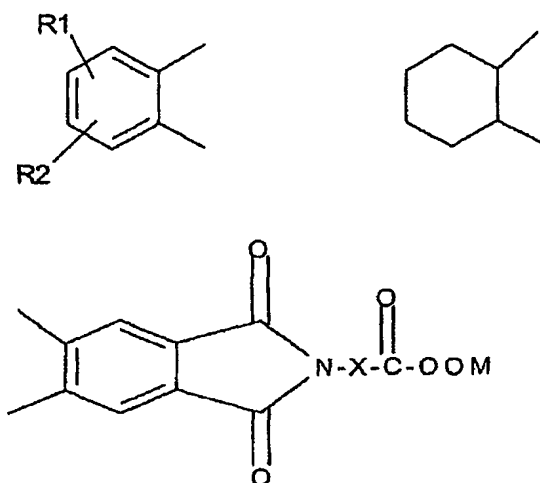


(I)

- 10 in which A indicates a group chosen from the following



or



in which:

5

n is an integer 0, 1 or 2,

R_1 has one of the following meanings: hydrogen, chlorine, bromine, C_1 - C_{20} alkyl, C_2 - C_{20} alkenyl, aryl or alkylaryl,

R_2 is hydrogen, chlorine, bromine or a group chosen from the following: - SO_3M , - CO_2M , - CO_3M or - OSO_3M ,

10

M means hydrogen, an alkali metal, ammonium or an equivalent of an alkaline-earth metal,

X indicates a C_1 - C_{19} alkylene or an arylene;

the said acids being in the β -crystal form;

15

B) from 0.001% to 0.9%, preferably from 0.005% to 0.3% and even more preferably from 0.01% to 0.1% of a surfactant chosen from nonionic surfactants;

the difference to 100% consisting of water and of other optional additives for detergent formulations;

the said dispersions having a viscosity of not more than 2000 mPa.sec at 25°C by applying a shear rate of 20 s⁻¹;

5 in which the dissolution time of the component A), determined via the test of the rate of dissolution at a temperature of 40°C or 18°C, is not more than 5 minutes when determined at 40°C or 15 minutes when determined at 18°C, for an amount of dissolved acid equal to 99% of the theoretical amount, as defined in the rate of dissolution test;

10 the said dispersions in the test of stability at 40°C for seven days show variations in viscosity of not more than 300 mPa.sec, preferably less than 150 mPa.sec and even more preferably less than 100 mPa.sec, the viscosity being determined under the conditions indicated above.

2. Formulations according to Claim 1 being obtainable by grinding the crystals of imidoalkanepercarboxylic acids in α form dispersed in an excess of water, in the presence of a surfactant chosen from nonionic surfactants; cooling
15 the liquid dispersion to a temperature below 30°C.

3. Formulations according to Claim 1 or 2, in which, in the test of stability at 40°C for seven days, the imidoalkanepercarboxylic acids, component A), show a loss of peroxide oxygen content of not more than 2% and preferably not more than 1% relative to the initial titre.

20 4. Formulations according to Claims 1 to 3, in which the imidoalkanepercarboxylic acids, component A), are in the α -crystal form, which is stable on storage in solid form, and in that, when dispersed in water, it converts into crystals of the β -crystal form, which is stable in aqueous medium, the said crystals of β -crystal form having average dimensions of less than 30
25 microns, preferably less than 10 microns, more preferably less than 8 microns and particularly less than or equal to 2 microns; the α -crystal form being characterized, relative to the β -crystal form, in that the related spectra obtained via the techniques of x-ray diffraction and surface infrared spectroscopy (IR/S) show, relative to those of the β form of the same peracid, a different x-ray
30 spectral image and a shift of the typical absorption in the region 1697-1707 cm⁻¹ in IR/S towards higher frequencies, of the order of about 8-10 cm⁻¹.

5. Formulations according to Claims 1 to 4, in which the nonionic

surfactant is chosen from ethoxylated, polyethoxylated, propoxylated or polypropoxylated nonionic surfactants or surfactants containing one or more propoxy repeating units and one or more ethoxy units.

5 6. Formulations according to Claim 5, in which the polyethoxylated or polypropoxylated nonionic surfactants have a number of ethoxy or propoxy repeating groups of less than or equal to 15 and preferably less than or equal to 5; the nonionic surfactants containing propoxy and ethoxy units have a number of ethoxy groups of not more than 10 and a number of propoxy units of not more than 2.

10 7. Formulations according to Claim 6, in which the surfactants are ethoxylated surfactants.

 8. Formulations according to Claims 1 to 7, comprising additives or ingredients that are conventional for detergent and disinfecting formulations, dissolved in aqueous solution and/or dispersed in the suspension together with
15 the imidoalkanepercarboxylic acids, component A).

 9. Formulations according to Claim 8, in which the said additives are chosen from those that contribute towards further increasing the chemical and physical stability of the formulation, preferably paraffins, phosphonic acids, optionally hydroxylated carboxylic acids and dicarboxylic acids, etc., or are co-
20 adjuvants and/or agents for optimizing the pH of the washing bath, preferably phthalic acids and adipic acid.

 10. Process for obtaining the formulations of Claims 1 to 7, comprising:

- 25 - grinding at a temperature of from 40°C to 65°C crystals of PAP in a form dispersed in an excess of water, the said excess preferably being at least 2 parts by weight of water/1 part by weight of percarboxylic acid, in the presence of a surfactant chosen from nonionic surfactants;
- cooling the liquid dispersion to a temperature below 30°C, preferably below 25°C, optionally with the addition of viscosifying additives.

30 11. Process according to Claim 10, in which the temperature to which the liquid dispersion is cooled is not less than 4°C.

12. Use of the formulations of Claims 1 to 9 in bleaching and disinfecting applications.

13. Formulations according to Claims 1 to 9, in which the imidoalkaneperoxy-carboxylic acid is ϵ -phthalimidoperoxyhexanoic acid.

5 14. Use according to Claim 12, in which the component A) of the formulations is ϵ -phthalimidoperoxyhexanoic acid.